

**REMARKS**

Entry of the foregoing and reconsideration of the subject application, as amended, pursuant to and consistent with 37 C.F.R. Section 1.112, and in light of the remarks which follow, are respectfully requested.

New claims 15, 16, 17 and 18 are supported by original claims 1, 3, 6 and 9 respectively; the new claims recite "consisting essentially of," New Claim 19 is supported by original claim 1; the new claim recites "consisting essentially of."

Claims 1-14 have been rejected under 35 U.S.C. Section 103(a) as purportedly being obvious over Smets et al. (U.S. Patent 6,541,438; hereinafter Smets) or Gardner et al. (U.S. Patent Application Publication 2003/0092598; hereinafter Gardner) in combination with Wagner (U.S. Patent 3,702,776). That rejection is respectfully traversed.

The present invention, as embodied in claim 1, concerns a method of improving shrink-resistance of natural fibers, synthetic fibers, or mixtures thereof, or fabrics or yarns composed of natural fibers, synthetic fibers, or blends thereof, comprising contacting said fibers or fabric or yarn with NaOH, H<sub>2</sub>O<sub>2</sub>, gluconic acid, dicyandiamide, and non-ionic surfactant, and optionally subsequently contacting said fibers or fabric or yarn with protease and non-ionic surfactant and optionally sodium sulfite and optionally triethanolamine and optionally polyacrylamide polymer.

**I. Combination of Smets and Wagner**

The primary reference Smets concerns laundry detergent and/or fabric care compositions comprising a modified enzyme which comprises a catalytically active amino acid sequence of a cellulolytic enzyme linked to an amino acid sequence comprising a Cellulose Binding Domain for selective binding and hydrolysis of amorphous cellulose of cotton containing fabrics in a

laundry and/or fabric care application (Abstract; column 1, lines 9-12; column 2, lines 49-62).

Smets states the following (column 10, lines 15-17): "The laundry detergent and/or fabric care compositions of the invention will comprise at least one additional detergent and/or fabric care components." Smets further states the following (column 10, lines 21-31):

The laundry detergent and/or fabric care compositions of the present invention preferably further comprise a detergent ingredient selected from cationic surfactants, dye transfer inhibiting polymers, builders--in particular zeolite A and sodium tripolyphosphate--and/or clays. These laundry detergent and/or fabric care compositions achieve improved fabric care, including improved anti-wrinkle, anti-bobbling and anti-shrinkage properties to fabrics, as well as provide enhanced static control, fabric softness, colour appearance and fabric anti-wear properties and benefits and improved fabric cleaning while preventing tensile strength loss.

The detergent components may also include nonionic surfactants (e.g., Triton<sup>TM</sup>), additional enzymes besides cellulase such as protease (column 20, lines 46-65), bleaching agents such as hydrogen peroxide (column 26, line 5), sodium sulphite (column 31, lines 19-22), triethanolamine (example 11, column 46, line 47), and NaOH (example 11, column 46, line 59).

The present invention differs from Smets in that the present invention concerns a method of improving shrink-resistance of natural fibers, synthetic fibers, or mixtures thereof, or fabrics or yarns composed of natural fibers, synthetic fibers, or blends thereof. The present invention is not concerned with laundry detergents or methods of cleaning clothes. In contrast, Smets is concerned with laundry detergents which are used in conventional laundry methods (column 35, lines 47-54; emphasis added):

The process described herein comprises contacting fabrics with a **laundrying solution** in the usual manner and exemplified hereunder. A **conventional laundry method** comprises treating soiled fabric with an aqueous liquid having dissolved or dispensed therein an effective amount of the laundry detergent and/or fabric care composition. The process of the invention is conveniently carried out in the course of the cleaning process.

Furthermore, Smets does not disclose use of the dicyandiamide which is a required component of the present invention.

The secondary reference Wagner concerns a method for shrinkproofing a woolen material by treating wool with a solution containing a polyhydroxide-modified isocyanate. The polyhydroxide-modified isocyanate may be produced by modifying diisocyanates with a polyhydroxide material containing 3 to 6 hydroxyl groups so that the resulting modified diisocyanate contains from about 3 to 6 free NCO groups (column 2, lines 49-56). The polyhydroxide material may be gluconic acid (column 3, line 40).

The primary reference Smets does not disclose use of gluconic acid, which is why the Examiner is forced to rely upon Wagner. However, these two references are in totally different fields. Smets is concerned with laundry detergents containing a modified cellulolytic enzyme demonstrating selective binding and hydrolysis of amorphous cellulose in cotton containing fabrics (Abstract; column 2, lines 38-46 and 49-51). In contrast, Wagner is concerned with reducing shrinkage of wool and is not concerned with laundry detergents. There is thus no motivation to add one component from Wagner's invention aimed at reducing shrinkage of wool with Smets' laundry composition aimed at treating cotton containing fabrics.

The Examiner has alleged the following (Office Action, page 3; emphasis added): "...from the teachings of the secondary references [*sic*, reference] one of ordinary skill in the art would be motivated to modify the primary references by incorporating the gluconic acid as taught and suggested by the secondary reference and would be expected to have similar properties."

However, Wagner does **not** utilize gluconic acid *per se*. Instead, Wagner produces a polyhydroxide-modified isocyanate by modifying diisocyanates with, for example, gluconic acid so that the resulting modified diisocyanate contains from about 3 to 6 free NCO groups (column 2, lines 49-56; column 3, line 40). Thus the Examiner's reliance upon Wagner does not cure the deficiency of Smets in the Examiner's attempt to reproduce the present invention.

It would appear that the Examiner has used hindsight reconstruction relying on Applicants' patent application as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claimed invention; this is strictly prohibited. *Grain Processing v. American Maize*, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988).

In addition, both Smets and Wagner do **not** disclose use of the dicyandiamide which is a required component of the present invention.

Applicants note that there are no data whatsoever supporting the alleged "anti-shrinkage" properties of Smets' laundry detergent. The Examiner needs to address this lack of enablement.

The claims do not stand and fall together. The method of the present invention, as claimed in claim 15, consists essentially of contacting fibers or fabric or yarn with NaOH, H<sub>2</sub>O<sub>2</sub>, gluconic acid, dicyandiamide, and non-ionic surfactant, and optionally subsequently contacting said fibers or fabric or yarn with protease and non-ionic surfactant and optionally sodium sulfite and optionally triethanolamine and optionally polyacrylamide polymer. The present invention as

claimed in claim 15 does **not** utilize Smets' modified enzyme which comprises a catalytically active amino acid sequence of a cellulolytic enzyme linked to an amino acid sequence comprising a Cellulose Binding Domain. Smets' modified enzyme is **fundamental** to his invention (column 1, lines 9-16 and lines 59-67; column 2, lines 39-column 3, line 11; column 3, lines 22-column 10, line 13).

## **II. Combination of Gardner and Wagner**

The primary reference Gardner concerns formaldehyde-free durable press finished textiles having cross-linked polymaleate finishes. The textiles are shrink-resistant and wrinkle-free. Gardner's cross-linking agent comprises a cross-linking adjunct that is a class of materials derived from maleic acid (paragraph 0016). Gardner also uses an esterification catalyst to facilitate the cross-linking by the cross-linking agents; examples of the esterification catalyst include dicyandiamide (paragraph 0022). Additional crosslinking agents include non-phosphorous polycarboxylic acids, carboxylic acids, and mixtures thereof (paragraph 0025). Gardner also uses chlorine scavengers such as polyacrylamides (paragraph 0046). Gardner also uses anti-abrasion additives such as polyacrylamides (paragraph 0053). Gardner utilizes textile pre-treatment involving sodium hydroxide and hydrogen peroxide (paragraph 0089).

The present invention differs from Gardner in that Gardner does not disclose use of the gluconic acid which is a required component of the present invention.

The secondary reference Wagner, as noted above, concerns a method for shrinkproofing a woolen material by treating wool with a solution containing a polyhydroxide-modified isocyanate. The polyhydroxide-modified isocyanate may be produced by modifying diisocyanates with a polyhydroxide material containing 3 to 6 hydroxyl groups so that the resulting modified

diisocyanate contains from about 3 to 6 free NCO groups (column 2, lines 49-56). The polyhydroxide material may be gluconic acid (column 3, line 40).

The primary reference Gardner does not disclose use of gluconic acid, which is why the Examiner is forced to rely upon Wagner. However, as noted above, Wagner does not utilize gluconic acid *per se*. Instead, Wagner produces a polyhydroxide-modified isocyanate by modifying diisocyanates with, for example, gluconic acid so that the resulting modified diisocyanate contains from about 3 to 6 free NCO groups (column 2, lines 49-56; column 3, line 40). Thus the Examiner's reliance upon Wagner does not cure the deficiency of Gardner in the Examiner's attempt to reproduce the present invention.

Again, it would appear that the Examiner has used hindsight reconstruction relying on Applicants' patent application as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claimed invention; this is strictly prohibited. *Grain Processing v. American Maize*, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988).

The claims do not stand and fall together:

The method of the present invention, as claimed in claim 9, comprises contacting the fibers or fabric or yarn with NaOH, H<sub>2</sub>O<sub>2</sub>, gluconic acid, dicyandiamide, and non-ionic surfactant, and subsequently contacting the fibers or fabric or yarn with protease, sodium sulfite, triethanolamine, and non-ionic surfactant, and optionally polyacrylamide polymer. Neither Gardner nor Wagner disclose use of protease, sodium sulfite, and triethanolamine.

The method of the present invention, as claimed in claim 15, consists essentially of contacting fibers or fabric or yarn with NaOH, H<sub>2</sub>O<sub>2</sub>, gluconic acid, dicyandiamide, and non-ionic surfactant, and optionally subsequently contacting said fibers or fabric or yarn with protease and

non-ionic surfactant and optionally sodium sulfite and optionally triethanolamine and optionally polyacrylamide polymer. The present invention as claimed in claim 15 does not utilize Gardner's cross-linking agent which comprises a cross-linking adjunct that is a class of materials derived from maleic acid (paragraph 0016). Gardner's cross-linking agent is fundamental to his invention (Abstract; paragraphs 0005-0010, 0013, 0015-0020).

Withdrawal of the rejection of the claims under 35 U.S.C. Section 103(a) is respectfully requested in view of the above.

In view of the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited.

In the event that there are any questions relating to the Amendment, or to the application in general, it is respectfully requested that the undersigned be contacted so that prosecution of this application can be expedited.

Please charge any required fees pertaining to this Amendment to the Deposit Account of the undersigned, No. 50-2134, and credit any overpayment to said Account.

Respectfully submitted,

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